SUBACUTE BACTERIAL ENDOCARDITIS and ANTIMICROBIAL PROPHYLAXIS

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Comprehensive Dentistry

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The Root of All Evil

Infective Endocarditis

Subacute Bacterial Endocarditis

- microbial infection of heart valves or endocardium
- infective endarteritis

Infective Endocarditis

Subacute Bacterial Endocarditis

- 10-60 cases per million people per year
- 80% of cases from patients with predisposing conditions

Infective Endocarditis

Causes

- Rapid onset-

Staphylococcus Aureus

- Insidious onset-

Streptococcus Viridans

Infective Endocarditis

SYMPTOMS

- Weakness
- Fatigue
- Weight loss
- Fever
- Chills
- Night sweats
- Anorexia
- Arthralgia

Infective Endocarditis

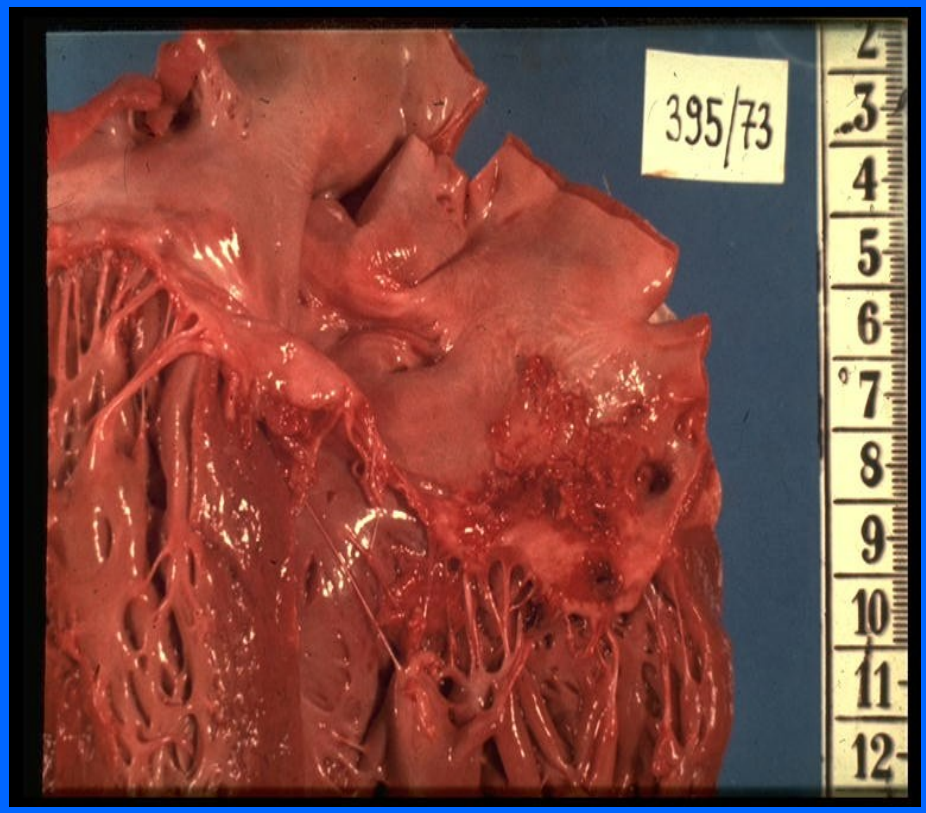
SIGNS

- Petechial Hemorrhages
- Linear Hemorrhages
- Osler Nodes
- Janeway Lesions
- Retinal Hemorrhages
- Heart Murmur

Infective Endocarditis

Outcome

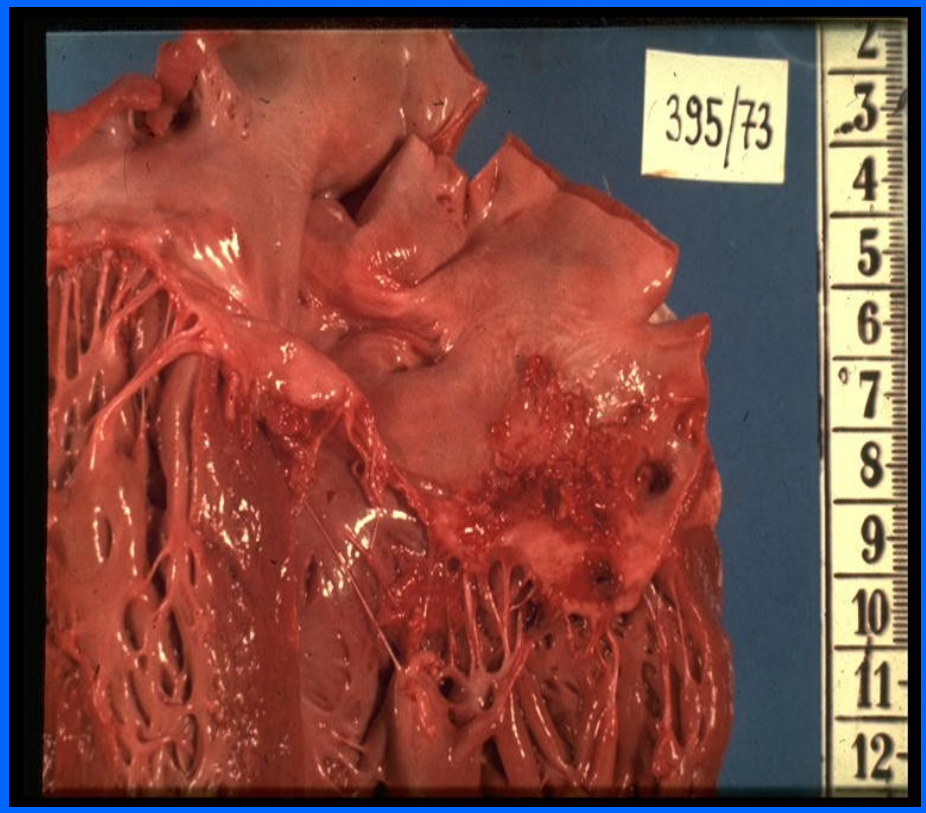
- Fatal 10-70% of cases



Infective Endocarditis

Complications

- Reinfection
- Congestive heart failure
- Renal Disease
- Cerebral Vascular Accident



Conspiracy Theories

Endocarditis and Dentistry

Dental procedures produce a transient bacteremia:

Streptococcus Viridans

- S. Mutans
- S. Mitis

Endocarditis and Dentistry

Risk of bacteremia from daily activities, homecare & eating

1000 times greater than risk from dental treatment

Streptococcus Viridans

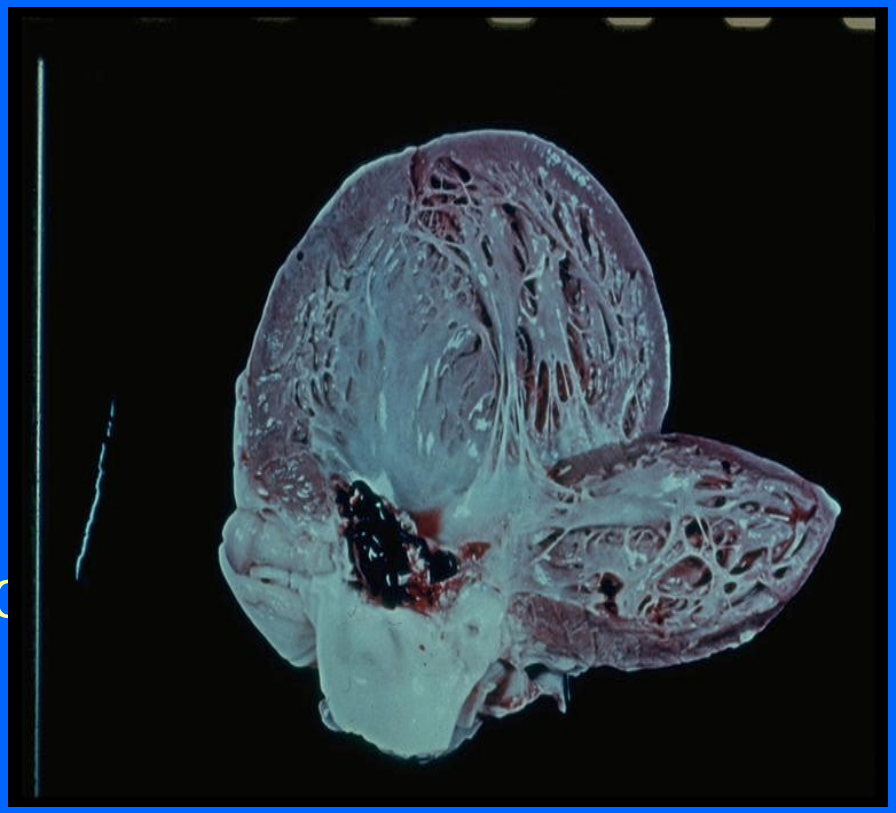
- S. Mutans
- S. Mitis

Endocarditis and Dentistry

Documentation

- Anecdotal evidence
- In vitro studies

Double blind placebo study not likely



Ideal Antimicrobial Prophylaxis

- Benefits outweigh risks
- Antibiotics in blood prior to bacterial dissemination
- Loading dose
- Antibiotics specifically effective
- Antibiotics time specific
- Cheap and easy to use

Antimicrobial Recommendations

ADA/AHA (August 1997)

ADA/AAOS (July 1997)

Indications for Prophylaxis

Cardiac Conditions

(table 1)

HIGH RISK

- Prosthetic heart valves
- Previous endocarditis
- Congenital heart disease
- Pulmonary shunts

Indications for Prophylaxis

Cardiac Conditions

(table 1)

MODERATE RISK

- Congenital cardiac malformations
- Acquired valvar dysfunction
- Hypertrophic cardiomyopathy
- MVP with

Indications for Prophylaxis

OTHER CONDITIONS

- Rheumatic heart disease
- **Systemic lupus erythematosus**
- Marfan's Syndrome
- Prior history of drugs to treat obesity
  - Fenfluramine
  - Phentermine

Antimicrobial Prophylaxis Not Recommended

Cardiac Conditions

- Isolated secundum atrial septal defect
- Repaired atrial septal defect, ventricular septal defect or patent ductus arteriousus
- Previous CABG
- MVP without valvar regurgitation

Antimicrobial Prophylaxis Not Recommended

Cardiac Conditions

- Physiologic, functional or innocent heart murmurs
- Previous Kawasaki disease without valvar dysfunction
- Previous Rheumatic fever without valvar dysfunction
- Cardiac pacemakers and implanted defibrillators

Antimicrobial Prophylaxis Not Recommended

Other than Cardiac Conditions

- Neutropenic patient
- Diabetic patient
- Asplenic patient
- End stage renal disease
- Transplant patient
- HIV patient

Antimicrobial Prophylaxis Not Recommended

Other than Cardiac Conditions

- Total joint replacement (after two years)
- Other implanted devices
  - Cerebrospinal fluid shunts
  - Intravascular access device
  - Penile implant
  - Breast implants
  - Intraocular implants

Dental Procedures Associated with Bacteremias

- Periodontal Procedures
  - surgery
  - scaling and root planing
  - probing and recall maintenance
  - subgingival placement of antibiotic fibers or strips
  - Prophylactic cleaning where bleeding is anticipated

Dental Procedures Associated with Bacteremias

- Extractions
- Implant placement
- Reimplantation of avulsed teeth
- Endodontics beyond the apex
- Placement of orthodontic bands
- Intraligamentary injections

Dental Procedures NOT Associated with Bacteremias

- Restorative dentistry
- Local anesthetic injections
- Intracanal endodontics and post placement
- Rubber dams
- Suture removal

Dental Procedures NOT Associated with Bacteremias

- Removal of prosthodontic or orthodontic appliances
- Oral impressions
- Fluoride treatments
- Radiographs
- Orthodontic appliance adjustment
- Shedding of primary teeth

Antimicrobial Prophylaxis Regimens ADA/AHA

Standard general prophylaxis:

- Amoxicillin
- Adults: 2.0 grams; Children: 50mg/kg orally 1 hour before procedure

Antimicrobial Prophylaxis Regimens ADA/AHA

Unable to take oral medications:

- Ampicillin
- Adults: 2.0 grams IM or IV; Children: 50mg/kg IM or IV within 30 min before procedure

Antimicrobial Prophylaxis Regimens ADA/AHA

Allergic to penicillin:

- Clindamycin
  - Adults: 600mg; Children: 20mg/kg orally 1 hour before procedure

Antimicrobial Prophylaxis Regimens ADA/AHA

Allergic to penicillin:

- Cephalexin or cefadroxil

*not recommended for use in patients with immediate-type hypersensitivity to PCN

- Adults: 2.0 grams; Children: 50mg/kg orally 1 hour before procedure

Antimicrobial Prophylaxis Regimens ADA/AHA

Allergic to penicillin:

- Azithromycin or clarithromycin
- Adults: 500mg; Children: 15mg/kg orally 1 hour before procedure

Antimicrobial Prophylaxis Regimens ADA/AHA

Allergic to penicillin and unable to take oral medications:

- Clindamycin
  - Adults: 600mg; Children: 20mg/kg IV within 30 min before the procedure

Antimicrobial Prophylaxis Regimens ADA/AHA

Allergic to penicillin and unable to take oral medications:

- Cefazolin

* not recommended in patients with severe PCN allergy

- Adults: 1.0gram; Children: 25mg/kg IV or IM within 30 min before the procedure

Antimicrobial Prophylaxis Regimens ADA/AAOS

Not allergic to penicillin and able to take oral medications:

- Cephalexin, cephradine or amoxicillin
- Adults: 2.0grams orally 1 hour before the procedure

Antimicrobial Prophylaxis Regimens ADA/AAOS

Not allergic to penicillin and unable to take oral medications:

- Cefazolin
- Ampicillin

- Adults: 1.0gram IV or IM 1 hour before the procedure
- Adults: 2.0grams IV or IM 1 hour before the procedure

Antimicrobial Prophylaxis Regimens ADA/AAOS

Allergic to penicillin and able to take oral medications:

- Clindamycin
  - Adults: 600mg orally 1 hour before the procedure

Antimicrobial Prophylaxis Regimens ADA/AAOS

Allergic to penicillin and unable to take oral medications:

- Clindamycin
  - Adults: 600mg IV 1 hour before the procedure

Recommendations

- Screen all patients
- Excellent homecare
- Homecare mastered before routine treatment

Recommendations

- Expeditious treatment
- 7-14 days between appointments

Recommendations

- Patients already taking antibiotics need a different antibiotic
- Prerinse (not gingival irrigation)
- Edentulous patients

Recommendations

If unexpected bleeding occurs institute antibiotic prophylaxis within 2 hours!

HAVE YOU SEEN THIS MAN?